

22

Region 161-167,
Region 280-288,
Region 448-455, and
Region 468-475;

wherein (a) the alteration(s) are independently

(i) an insertion of an amino acid downstream of the amino acid which occupies the position,

(ii) a deletion of the amino acid which occupies the position, or

(iii) a substitution of the amino acid which occupies the position with a different amino

acid,

(b) the variant has alpha-amylase activity and (c) each region or position corresponds to a region position of the amino acid sequence of the parent Fungamyl-like alpha-amylase having the amino acid sequence of SEQ ID NO: 2.

32. The variant of claim 31, wherein the variant includes the following substitution: Q153S.

33. The variant of claim 31, wherein the variant has improved thermostability and/or increased stability at acidic pH.

34. A DNA construct comprising a DNA sequence encoding the variant of claim 31.

35. A recombinant expression vector comprising a DNA construct according to claim 34.

36. A cell which is transformed with a DNA construct according to claim 34.

37. A cell according to claim 36, wherein the cell is a microorganism.

38. The cell according to claim 37, wherein the cell is a protease deficient strain of *Aspergillus*.

39. A composition for producing high maltose syrup comprising the variant of claim 31.

02

40. A dough improving composition, comprising the variant of claim 31.
41. A brewing composition, comprising the variant of claim 31.
42. The brewing composition of claim 41, further comprising at least one enzyme selected from the group consisting of beta-amylase and isoamylase enzymes.
43. A composition for producing alcohol, comprising the variant of claim 31.
44. A process of liquefying starch, wherein the variant of claim 31 is used for treating starch.
45. A process of producing high maltose syrups, wherein the variant of claim 31 is used for liquefying starch.
46. A brewing process, wherein the variant of claim 31 is added during fermentation of wort.
47. An alcohol production process, wherein the variant of claim 31 is used for liquefying starch.
48. The variant of claim 31 wherein said variant is immobilized.
49. A method for generating an alpha-amylase variant of a parent Fungamyl-like alpha-amylase, which variant has increased thermostability relative to the parent, the method comprising:
 - (a) subjecting a DNA sequence encoding the parent Fungamyl-like alpha-amylase to random mutagenesis,
 - (b) expressing the mutated DNA sequence obtained in step (a) in a host cell, and
 - (c) screening for host cells expressing a mutated alpha-amylase which has improved thermostability at acidic pH relative to the parent Fungamyl-like alpha-amylase.